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CHAPTER 2

EARTHWORK, EROSION CONTROL, AND SEEDING

2.00.00 EARTHWORK AND GRADING

All work performed according to this section must comply with the general requirements contained within Chapter 1 and the acceptance requirements of Chapter 10. All earthwork operations shall be executed in a manner that will minimize dust, noise, excessive accumulation of debris, danger to the public, and interference with other construction. Positive drainage and adequate erosion control shall be provided at all times during the earthwork operations.

Earthwork operations shall be executed to provide compaction to a minimum 85-percent Standard Proctor density at ± 3 percent of optimum moisture in areas to be eventually turfed or planted and compaction to minimum 95 percent Standard Proctor density at ± 2 percent of optimum moisture under all walks, trails, streets, structures, public rights-of-way, and other site improvements. In areas of granular materials, use of the Modified Standard Proctor (ASTM-1557) shall be used for a compaction to minimum 90 percent density at ± 2 percent of optimum moisture. Testing, if required by the City to demonstrate compliance with this specification, shall be performed per AASHTO T-180 or the above referenced ASTM standard by a qualified soils technician and stamped by a Professional Engineer registered in the State of Colorado and practicing in the field of soil mechanics in order to assure compliance with the City specifications for compaction. All costs for such testing shall be paid by the Responsible Party. Refer to the applicable section in these STANDARDS AND SPECIFICATIONS for compaction requirements within the public right-of-way.

Upon completion of earthwork operations, the Responsible Party shall leave the site and soil clean to allow for proper installation of irrigation, plantings, and related site improvements. Completed grades shall be smoothly and uniformly sloped, properly compacted, and shall provide drainage away from site improvements. All banks or slopes constructed shall be maintained in a stable condition by approved methods to prevent slips, washouts, or erosion. No area to be seeded or sodded shall be steeper than a 4:1 maximum slope (4 horizontal: 1 vertical), nor flatter than a 2-percent minimum slope. Final grades shall conform to the final drainage study and overlot grading plans.

2.10.00 EROSION CONTROL

The primary goal of all erosion control systems is to prevent unacceptable erosion and maintain water quality at acceptable levels. This shall be accomplished by analyzing pertinent environmental factors and applying technical procedures that result in a workable plan.

There are two major elements in developing an erosion and sedimentation control plan. The first is an investigation and analysis of the natural characteristics of a site (such as soil type, steepness of slopes, and available vegetation) that will help the Responsible Party anticipate where erosion problems might occur. Detailed information on soils, vegetation, topography, geologic, and hydrologic conditions shall be obtained for the site. The second element is use of effective control measures. Attention shall be given to identify and evaluate problems that may cause serious erosion during and after construction. Runoff from the site, as well as runoff from the watershed above, shall be controlled and discharged safely. Measures shall be taken to prevent erosion and sediment deposition on downstream properties.

2.10.01 Limitations

No person shall clear or grade land without implementing soil erosion and sediment controls in accordance with the requirements of the CDPHE Water Quality Control Division.

2.11.00

EROSION AND SEDIMENT CONTROL PLANS

2.11.01 Review and Approval

Responsible party shall submit a copy of the approved CDPHE permit for Stormwater Discharges associated with Construction Activity prior to beginning any work.

2.11.02 Grading and Erosion Control Notes

The following minimum control measures shall be stated on, as well as incorporated into the overlot grading and erosion control plan:

GRADING NOTES

- (A) All site grading (excavation, embankment, and compaction) shall conform to the recommendations of the latest soils investigation for this property.
- (B) Natural vegetation shall be retained and protected wherever possible. Exposure of soil to erosion by removal or disturbance of vegetation shall be limited to the area required for immediate construction operation and for the shortest practical period of time.
- (C) Topsoil shall be stockpiled to the extent practicable on the site for use on areas to be revegetated. Any and all stockpiles shall be located and protected from erosive elements.
- (D) Temporary vegetation shall be installed on all disturbed areas where permanent surface improvements are not scheduled for installation within three months. Vegetation shall be a vigorous, drought tolerant, native species mix. Project scheduling should take advantage of spring or fall planting seasons for natural germination, but seeded areas shall be irrigated, if conditions so merit.
- (E) At all times, the property shall be maintained and/or watered to prevent wind-caused erosion. Earthwork operations shall be discontinued when fugitive dust significantly impacts adjacent property. If earthwork is complete or discontinued and dust from the site continues to create problems, the Responsible Party shall immediately institute mitigative measures and shall correct damage to adjacent property.
- (F) Temporary cut/fill slopes shall not exceed a steepness of 2:1 (2H: 1V). Permanent slopes shall not exceed 4:1 (4H: 1V) in areas to be seeded or sodded.
- (G) Utility construction is not approved under this plan.
- (H) The Responsible Party shall provide any additional dust abatement and erosion control measures deemed necessary by the City, should conditions merit them.
- (I) Temporary fences may be required along all boundaries of the construction limits as shown on the approved erosion control plan, to prevent grading on property not owned by the Responsible Party. In addition, the City may require additional temporary fences if field conditions so merit them.

2.11.03 Standard Erosion Control Details

In the Appendix of these STANDARDS AND SPECIFICATIONS are the standard erosion control details which are acceptable to the City of Delta.